



Description

Topsoil from the construction site should be preserved and used to enhance the final site stabilization with vegetative cover. This management practice is to be done in support of temporary or permanent seeding, in conjunction with erosion source control practices such as silt fences and mulching.

Selection Criteria

This technique is applicable to all types of areas where earth-disturbing activities expose subsoil layers that are poorly suited to supporting vegetation growth. Topsoil is generally not placed on areas that are steeper than 3:1 or which are not adequately graded and compacted.

Design Considerations

Preservation and reuse of native topsoil helps to improve the success rate of new vegetation. Additional organic soil or compost may be used for some areas which do not have fertile soil layers.

Typically, a minimum of 4 inches of stabilized topsoil is needed to support grass vegetation. Trees, shrubs and vines will require a good layer of topsoil in addition to the proper subsurface soils. If the site is excavated down to rock such as sandstone or shale, then 6 to 12 inches of topsoil or additional soil is recommended for good plant growth.

Stripping Topsoil

Vegetative material that is cleared and grubbed during construction can be economically reused as compost or mulch onsite if handled correctly. Inspect to be sure that nuisance vegetation and weeds are not composted. Stockpile and water as necessary.

Prior to stripping away topsoil, make certain that all downslope sediment control practices are in place and operational.

Strip topsoil (typically 4 to 6 inches) only from those areas that will be disturbed by excavation, filling, road building, or compaction from equipment. Locate topsoil stockpiles where they will not erode, block drainage structures, or interfere with work on the site. Contain potential stockpile sediment runoff using measures such as silt fences, temporary seeding, etc. If stockpiles remain more than 14 days, local, state and federal requirements, require temporary stabilization.

Placing Topsoil

Prior to placing topsoil, verify that the subgrade has been graded and compacted. Scarify subgrade to a depth of 3 inches or disk the subgrade to ensure that topsoil bonds with underlying earth.

Imported topsoil, if needed, shall be from a reliable non-contaminated source. Perform pH tests prior to placement in order to determine soil amendments and treatments necessary to support vegetation growth. Perform pH tests whenever a change in topsoil is noted or a different source is selected.

Apply a minimum of 4 inches topsoil evenly. Compact soil with one or two passes of a tracked piece of equipment up and down the slope (see 5.12 Surface Roughening (SR)) to reduce erosion potential.

Apply fertilizer at rates suitable for the particular type of vegetation and soil conditions. Consult an agricultural extension agent or a horticulturist for specific instructions and recommendations (or see UT Agricultural Extension website).

Table 1 shows the typical amount of lime needed for topsoil which does not meet normal pH requirements. The amount of lime will also depend on the particular type of vegetation selected.

Maintenance

Inspect areas of newly-applied topsoil frequently until vegetation is fully established. Maintain newly-graded topsoil areas and inspect regularly. Restore areas showing wash and settlement to the specified grades with a tolerance of 1 inch above or below. Finish grading is usually done by hand shovel operations.

Limitations

Topsoil can wash away if erosion control practices are not provided. Place stockpiles in protected areas with silt fences and other controls.

Topsoil should not be applied to slopes steeper than 3:1 (H:V) without the use of suitable Matting (see 5.5 Matting (MA)) or Geotextile (see 5.3 Geotextile (GE)).

Table 1
Typical Amount of Lime Required for Grass Seeding

Topsoil pH	Lime required per 1000 square feet
Less than 4.0	(soil not suitable for use)
4.0 to 4.5	160 pounds
4.5 to 5.0	120 pounds
5.0 to 5.5	80 pounds
5.5 to 6.0	40 pounds
6.0 to 8.0	0 pounds
Over 8.0	(soil not suitable for use)

References

Camp Dresser & McKee, Woodward-Clyde, Aguilar Engineering, Psomas & Associates, MK Centennial, 1997. *Construction Contractors Guide and Specifications, Caltrans Storm Water Quality Handbooks*. prepared for the California Department of Transportation.

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University of Tennessee Department of Civil and Environmental Engineering. August 1998. *Soil Erosion Prevention and Sediment Control - Reducing Nonpoint Source Water Pollution on Construction Sites*.

Tennessee Department of Transportation (TDOT). March 1995. *Standard Specifications for Road and Bridge Construction*.